

Prevention of Significant Deterioration Permit Fact Sheet

July 1, 2016

**MATEP LP
474 Brookline Avenue
Boston, MA 02215**

MATEP LP's 14.4 MW Combined Heat and Power Project

**Transmittal No. X259947
Application No. NE-14-013**

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I. General Information

Name of Source: Medical Area Total Energy Plant - Combined Heat and Power Facility Upgrade Project

Location: Boston, Massachusetts

Applicant's Name and Address: MATEP Limited Partnership (MATEP LP)
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Prevention of Significant
Deterioration/Major Comprehensive
Plan Application

Transmittal Number: X259947
Application Number: NE-14-013

Massachusetts Department of
Environmental Protection (MassDEP)

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On August 26, 2014, MATEP Limited Partnership (MATEP LP or Applicant or Permittee) submitted an initial Application to MassDEP requesting a Prevention of Significant Deterioration (PSD) Permit and a 310 Code of Massachusetts Regulations (CMR) 7.02 Major Comprehensive Plan Application Approval (Plan Approval) for a new 14.4 megawatt (MW) combined heat and power (CHP) unit (Project), which will combust natural gas as a primary fuel and ultra low sulfur diesel (ULSD) as a back-up fuel, designated CTG-3/HRSG-3000. This unit will be located at the existing Medical Area Total Energy Plant (MATEP or Facility), 474 Brookline Avenue in Boston Massachusetts. On September 11, 2015, MassDEP issued a Technical Deficiency Letter upon completing a preliminary review of MATEP LP's major Comprehensive Plan Application. On October 1, 2015, MATEP submitted additional information to address the deficient items that are outlined in the technical deficiency letter. Beginning on November 3, 2015 and on various subsequent dates, the Applicant submitted letters with supplemental technical information

addressing the technical deficiency letter including start-up and shutdown values for PM_{2.5}, while firing natural gas and ULSD, and the use of clean fuels. These submittals constitute amendments to the Application, and MassDEP is treating them as such.

Based on all submittals, MassDEP has concluded that the Permittee's PSD Application is complete and provides the necessary information showing that the Project meets federal PSD regulations. The Permittee's supplemental technical Project information is part of the official record for this Fact Sheet and the PSD Permit. After reviewing the August 26, 2014 Application and all of the additional information, MassDEP prepared a Draft Fact Sheet and Draft PSD Permit and issued those draft documents for a 30 day public comment period as required by the PSD Delegation Agreement and 40 CFR Part 124 – Procedures for Decision Making. After consideration of comments received during the public hearing and public comment period and supplemental information, MassDEP is issuing both this PSD Fact Sheet and PSD Permit together with a Response to Comments (RTC) document.

The Project is also subject to the MassDEP Plan Approval and Emission Limitations requirements under 310 CMR 7.02. MassDEP is concurrently issuing the Plan Approval and the PSD Permit. The Plan Approval regulates all pollutants emitted by the Project, including those Criteria Pollutants that triggered PSD review and are regulated under the PSD Permit. MATEP LP must ensure that its Project complies with the federal PSD Permit and MassDEP's Plan Approval, as well as other applicable federal and state requirements.

II. Project Location

The Project is located in an urban area at 474 Brookline Avenue in Boston, Massachusetts, where the existing MATEP Combined Heat and Power Plant is operating to generate electricity and steam for the medical area facilities such as the Dana-Farber Cancer Institute, Joslin Diabetes Center, and Boston Children's Hospital. The Project location is classified as either "attainment" or "unclassifiable" with respect to the National Ambient Air Quality Standards (NAAQS) for sulfur dioxide (SO₂), nitrogen dioxide (NO₂), carbon monoxide (CO), particulate matter with diameters less than 10 microns (PM₁₀) and 2.5 microns (PM_{2.5}) and lead. Therefore, the Project may be subject to PSD review for these pollutants.

III. Proposed Project

MATEP LP currently operates two combustion turbine generators with HRSGs (CHP units). The Project consists of a third CHP unit, a 14.4 MW electric power output-rated Solar Titan 130 combustion turbine generator (CTG-3), with natural gas as the primary fuel and ultra low sulfur diesel (ULSD) as backup fuel. Combustion turbine exhaust gases will pass through a heat recovery steam generator (HRSG-300) equipped with a natural gas fired duct burner rated at 38.8 million Btu per hour (mmBtu/hr) maximum fuel input rate. The combustion turbine will feature a

Dry Low NO_x (DLN) combustor for natural gas and ULSD. The HRSG exhaust will be equipped with a selective catalytic reduction (SCR) system and an oxidation catalyst for post-combustion control of NO_x and CO, respectively. CTG-3/HRSG-300 will be housed entirely within the existing Facility.

MATEP LP has requested, based upon a review of Best Available Control Technology (BACT) for Clean Fuels, that the proposed turbine be permitted for year-round operation on natural gas with ultra low sulfur distillate (ULSD) to be used as a backup fuel for up to 720 hours per 12-month rolling period, when natural gas is not available or as stipulated in the Special Conditions section of the PSD Permit.

The Facility currently houses several heat and power generating emission units identified in Table 1 below:

Table 1. Existing Emission Units at Facility		
EU#	Description of EU	EU Design Capacity
PSG-1	Victory Energy Type O Boiler	214 mmBtu/hr (gas) 205 mmBtu/hr (oil)
PSG-2	Riley Boiler No. 2	244 mmBtu/hr
PSG-3	Riley Boiler No. 3	244 mmBtu/hr
Zurn-1	Zurn Afterburner and HRSG No. 1	225 mmBtu/hr
Zurn-2	Zurn Afterburner and HRSG No. 2	225 mmBtu/hr
DEG-1	Mirrlees Diesel Engine Generator No. 1	63.8 mmBtu/hr
DEG-2	Mirrlees Diesel Engine Generator No. 2	63.8 mmBtu/hr
DEG-3	Mirrlees Diesel Engine Generator No. 3	63.8 mmBtu/hr
DEG-4	Mirrlees Diesel Engine Generator No. 4	63.8 mmBtu/hr
DEG-5	Mirrlees Diesel Engine Generator No. 5	63.8 mmBtu/hr
DEG-6	Mirrlees Diesel Engine Generator No. 6	63.8 mmBtu/hr
CTG-1	Alstom Gas Combustion Turbine No. 1	152.6 mmBtu/hr

Table 1. Existing Emission Units at Facility		
EU#	Description of EU	EU Design Capacity
CTG-2	Alstom Gas Combustion Turbine No. 2	152.6 mmBtu/hr
HRSG-100	ERI HRSG No. 1 serving CTG-1	75 mmBtu/hr
HRSG-200	ERI HRSG No. 2 serving CTG-2	75 mmBtu/hr
EDG-1	210 KW Emergency Diesel Generator	2.94 mmBtu/hr
EDG-2	410 KW Emergency Diesel Generator	5.47 mmBtu/hr

Table 1 Key:

EU = emission unit

HRSG= heat recovery steam generator

DEG = diesel engine generator

CTG = combustion turbine generator

EDG = emergency diesel generator

PSG = pressure steam generator

mmBtu/hr = million Btu per hour

KW = kilowatt

No. = number

IV. PSD Program Applicability and Review

MassDEP administers the PSD program in accordance with the provisions of the April 11, 2011 PSD Delegation Agreement between MassDEP and EPA which states that MassDEP agrees to implement and enforce the federal PSD regulations as found in 40 CFR 52.21 and 40 CFR Part 124 regarding permit issuance, modification and appeals.

The PSD regulations at 40 CFR 52.21 require that a major new stationary source of a regulated New Source Review (NSR) pollutant, or a major modification with respect to a regulated NSR pollutant, undergo a PSD review and that a PSD Permit be granted before commencement of construction, except with respect to a project located in a nonattainment area for the particular pollutant.

40 CFR 52.21(b)(1) of the federal PSD regulations defines a “major stationary source” as either (a) any of 28 designated stationary source categories with potential emissions of 100 tons per

year (tpy) or more of any regulated NSR pollutant, or (b) any other stationary source with potential emissions of 250 tpy or more of any regulated NSR pollutant. MATEP is an existing major stationary source as defined by source category and emission thresholds.

In addition, a project at an existing major stationary source is subject to PSD review if the Project would result in a significant emissions increase and a significant net emissions increase of a regulated NSR pollutant.

The Project will result in a significant emissions increase and a significant net emissions increase for PM₁₀ and PM_{2.5}. Therefore, the project is subject to PSD review as a major modification.

If a project is subject to the PSD program, the owner or operator must apply for and obtain a PSD Permit that meets regulatory requirements including:

- Best Available Control Technology (BACT) requiring sources to minimize emissions to the greatest extent practical;
- An ambient air quality analysis to ensure that the emission increases do not cause or contribute to a violation of any applicable PSD increments or NAAQS;
- An additional impact analysis to determine direct and indirect effects of the proposed source on industrial growth in the area, soil, vegetation and visibility; and
- Public comment including an opportunity for a public hearing.

Since potential greenhouse gas (GHG) emissions from the project will exceed 75,000 tpy, GHG emissions must also be included in the determination of Best Available Control Technology (BACT).

V. PSD Applicability

The existing Facility includes fossil-fuel boilers totaling more than 250 million Btu per hour heat input and has potential emissions of CO, NO_x and SO₂ each greater than 100 tons per year. Therefore, it is considered a major stationary source, as defined pursuant to 40 CFR Part 52, section 52.21(b)(1).

The Project is a major modification as defined pursuant to 40 CFR Part 52, section 52.21(b)(2). Potential emissions from the proposed CHP equipment are significant for three different PSD pollutants: PM₁₀, PM_{2.5} and GHG. Table 2 shows potential emissions from the proposed new equipment at the site relative to the PSD significance thresholds.

The emissions from the Project are compared to the PSD thresholds in Table 2 below:

Table 2 Project Potential to Emit			
Pollutant	Project Potential to Emit (in tpy)	PSD Significant Emission Rate (in tpy)	PSD Review Applies?
NOx	7.79	40	No
CO	5.84	100	No
VOC	2.5	40	No
PM	18.8	25	No
PM ₁₀	18.8 ¹	15	Yes³
PM _{2.5}	18.8 ¹	10	Yes³
SO ₂	2.56	40	No
GHG as CO _{2e} ²	108,500	75,000	Yes³
Lead	0.1	0.6	No
Fluorides	Negligible	3	No
Sulfuric Acid Mist	2.55	7	No
Hydrogen Sulfide	None expected	10	No
Total reduced sulfur	None expected	10	No
Reduced sulfur compounds	None expected	10	No

Table 2 Notes:

¹The projected annual emissions of PM₁₀ and PM_{2.5} have been calculated based on worst case conditions. The worst case assumption for projected annual emissions for PM_{2.5} is that all particulate matter emitted is PM_{2.5}. The worst case assumption for projected annual emissions for PM₁₀ is that all particulate matter emitted is PM₁₀.

²GHG emissions are expressed in terms of CO₂ equivalent emissions (CO_{2e}).

³ The proposed project exceeds the PSD significance thresholds for PM₁₀, PM_{2.5}, and GHG as CO_{2e}. As such, the PSD permit will address these pollutants.

Table 2 Key:

CT = Combustion Turbine

tpy = tons per year

NO_x = Nitrogen Oxides

CO = Carbon Monoxide

VOC = Volatile Organic Compounds

SO₂ = Sulfur Dioxide

PM₁₀ = Particulate Matter less than or equal to 10 microns in diameter

PM_{2.5} = Particulate Matter less than or equal to 2.5 microns in diameter

H₂SO₄ = Sulfuric Acid

Pb = Lead

GHG = Greenhouse Gases

CO_{2e} = Greenhouse Gases expressed as Carbon Dioxide equivalent and calculated by multiplying each of the six greenhouse gases (Carbon Dioxide, Nitrous Oxide, methane, Hydrofluorocarbons, Perfluorocarbons, Sulfur Hexafluoride) mass amount of emissions, in tons per year, by the gas's associated global warming potential published at Table A-1 of 40 CFR Part 98, Subpart A and summing the six resultant values.

VI. BACT Analysis

Pursuant to 40 CFR 52.21(j)(3), the Project is required to comply with BACT for the pollutants PM₁₀, PM_{2.5} and GHG emitted from the new combustion turbine and duct burner.

BACT is defined as, *“an emissions limitation ... based on the maximum degree of reduction for each pollutant subject to regulation under [the Clean Air] Act which would be emitted from any proposed major stationary source or major modification which the Administrator, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes or available methods, systems and techniques ... for control of such pollutant.”* 40 CFR 52.21(b)(12); Clean Air Act (CAA) 169(3).

BACT determinations under PSD review must follow the following five step “top-down” methodology as outlined in several EPA policy memoranda.

- 1. Identify all control technologies.** Identify all possible control options, including inherently lower emitting processes and practices, add-on control equipment, or combination of inherently lower emitting processes and practices and add-on control equipment.

- 2. Eliminate technically infeasible options.** Eliminate technically infeasible options based on physical, chemical and engineering principles.
- 3. Rank remaining control technologies by control effectiveness.** Rank the remaining control options by control effectiveness, expected emission reduction energy impacts, environmental impacts, and economic impacts.
- 4. Evaluate most effective controls and document results.** Determine the economic, energy and environmental impacts of the control technology on a case-by-case basis.
- 5. Select the BACT.** Select the most effective option not rejected as the BACT.

The results of the BACT analyses for the proposed Project are presented below for PM₁₀, PM_{2.5} and GHG emissions.

Combustion Turbine and Duct Burner

Clean Fuels

For the Project, a major element of the BACT analysis is the use of clean fuels. This Fact Sheet discusses the BACT analysis for fuels here, rather than repeating it for each individual emissions unit and pollutant. MATEP LP has proposed to burn natural gas and ULSD in the combustion turbine, and combust natural gas only in the duct burner. ULSD will be used for a maximum of 720 hours per 12-month rolling period, only when natural gas is unavailable or as stipulated in the Special Conditions section of the PSD Permit.

Step 1: Identify all control technologies.

Since this section is focusing on fuels, the identified control technologies are:

1. Use of natural gas only; and
2. Use of natural gas as primary fuel with ULSD as a backup fuel (limited to 720 hours per 12-month rolling period, which is equivalent to 878,400 gallons ULSD).

Step 2: Eliminate technically infeasible options.

The use of natural gas as the only fuel is not technically feasible. The Project has no direct connections to major regional natural gas pipelines and will be supplied by National Grid via Boston-area distribution points supplied by the Algonquin pipeline network. The Algonquin pipeline network has experienced physical delivery constraints in recent years during peak demand periods.

MATEP LP has a firm gas transportation contract with National Grid. National Grid places restrictions on the amount of natural gas that can be delivered on days when the heating degree day (HDD) is forecast to be greater than or equal to 50 in accordance with their tariff. During the

winter of 2014-15, temperature data from Logan airport (Boston) weather station indicates an HDD of 50 or above occurred on 8 days.

During anticipated or actual high demand periods or as a result of other delivery constraints, operational flow orders (OFOs) may be issued on critical days for the Algonquin pipeline network that impose economic penalties for exceeding certain usage tolerances.

The Facility and Project will also be periodically affected by planned and unplanned gas compressor maintenance outages that will physically prevent the turbine from combusting natural gas. These outages have an estimated duration and frequency of one (1) hour per month.

Step 3: Rank remaining control technologies by control effectiveness.

With respect to pollutant emissions, natural gas is the cleanest fuel identified. ULSD has higher emissions than natural gas, but their emissions profile are similar.

Natural gas is a cleaner fuel than ULSD; it therefore ranks higher in control effectiveness. The BACT process requires the reviewing authority to consider energy impacts, environmental, and economic impacts of natural gas to the use of ULSD.

Step 4: Evaluate most effective controls and document results.

Energy Impacts – Availability of natural gas may be affected by the type of natural gas service, firm or non-interruptible service or the less expensive, interruptible natural gas service. On some infrequent natural gas distribution bottleneck days, natural gas cannot be purchased at any price.

Economic Impacts – Under certain market condition, even when natural gas is available, it may still be more expensive than ULSD. This can be attributed to whether a Facility/Project uses an interruptible or firm natural gas contract, or if there is a shortage of natural gas. The price of firm natural gas will always be high but is always available, but interruptible natural gas will always be lower than a firm gas contract, except on the rare occasion when the spot market natural price could exceed the firm gas price. This price discrepancy would however occur only on those rare days when natural gas deliveries are affected or gas supplies are limited.

Environmental Impacts – The expected PM₁₀ and PM_{2.5} emission rate when burning ULSD is approximately 73 percent higher than combusting natural gas. Similarly, Greenhouse Gas (CO_{2e}) emissions are also increased when combusting ULSD. The emissions data clearly illustrate that natural gas is the cleanest fuel.

Step 5: Select BACT.

The PSD Permit will allow MATEP LP to combust ULSD as a backup fuel, but only under specifically defined circumstances that constrain its usage to those situations where not allowing ULSD firing would impair the Project's ability to operate. These situations include:

- a. natural gas curtailment by the natural gas supplier or distributor;
- b. instructed/mandated by the system operator, ISO-New England;
- c. conducting emissions testing; or
- d. conducting required equipment maintenance and testing.

The total number of hours of firing ULSD shall not exceed 720 hours per rolling 12-month period, equivalent to 878,400 gallons of ULSD. These fuel use limits are provided in Table 6, Special Terms and Conditions, of the PSD Permit.

PM₁₀/PM_{2.5}

Emissions of particulate matter result from trace quantities of ash (non-combustibles) in the fuel as well as from the products of incomplete combustion. The two main technologies/strategies to control and/or limit the emission of particulate matter from the Project are post-combustion controls and the use of clean fuels and good combustion control. MATEP LP reviewed the EPA RACT/BACT/LAER Clearinghouse and other on-line data sources including LAER determinations. The BACT analysis performed in section 5.2 of the MATEP LP's PSD Application demonstrates the technical infeasibility of post-combustion controls. As such, MATEP LP will minimize particulate matter emissions from the combustion turbine addition through the use of clean fuels and clean combustion. The BACT analysis and Supplemental BACT – Technical Deficiency Response (October 1, 2015) provides a summary of the effectiveness of clean fuels and combustion including economic, environmental, and energy impacts.

Natural gas will be used as the primary fuel for the turbine as it is the lowest ash-content fuel available. However, due to the critical nature of the Facility to supply electricity, steam, heat and chilled water to primary care medical facilities in the Longwood Medical Area, Ultra Low Sulfur Diesel (ULSD) is required as an alternative fuel. MATEP LP will limit the use of ULSD fuel to a usage equivalent of 720 hours of full-load ULSD operation (878,400 gallons of ULSD per

12-month rolling period). MATEP LP conservatively presumed that all particulate matter (PM) emissions from the new combustion turbine addition will be less than 2.5 microns in diameter (PM_{2.5}). MATEP proposed a BACT emission limit for PM₁₀, and PM_{2.5} of 0.02 pounds per million British thermal unit (lb/mmBtu) when firing natural gas and 0.034 lb/mmBtu when firing ULSD. These emission limits represent the maximum degree of reduction that is achievable, taking into account the scarcity of comparable units with emission limits that are demonstrated in practice and the limited technical opportunities to directly control and reduce particulate emissions.

MATEP LP's BACT analysis identified 10 facilities that are similar to the proposed combustion turbine addition (turbines firing natural gas or distillate oil, operating in combined-cycle or CHP mode, sized smaller than 25 MW with facilities that only have filterable particulate matter limits being excluded). The limits that MATEP LP proposes for this new combustion turbine addition, stated above, are comparable or slightly lower than recent projects of similar size such as Cornell, UMass Amherst, Gillette, and Harvard.

Natural gas will be the only fuel utilized for the duct burner as it is the lowest ash-content fuel available. Consistent with the PM₁₀ and PM_{2.5} BACT review conducted for the combustion turbine, post combustion control technology is not feasible. MATEP LP presumed that all particulate matter emitted from the duct burner will be less than 2.5 microns in diameter (PM_{2.5}). MATEP LP proposes a BACT emission limit for PM₁₀, and PM_{2.5} of 0.02 pounds per million British thermal unit (lb/mmBtu) firing natural gas. The emission limit that MATEP LP proposed for the duct burner is consistent with the emission limits established as BACT for similar size duct burner projects.

MassDEP agrees with the MATEP's PM₁₀ and PM_{2.5} BACT determination of 0.020 lbs/mmBtu and BACT emission limits for natural gas firing in the combustion turbine with or without duct firing. Furthermore, the Department also concurs with the Applicant's PM₁₀/PM_{2.5} BACT pound per hour (lb/hr) emission limit 3.29 lbs/hr for natural gas firing in the combustion turbine without duct firing and 4.07 lbs/hr natural gas firing in the combustion turbine with natural gas firing in the duct burner.

The Department verified MATEP's PM₁₀ and PM_{2.5} BACT for ULSD firing within the combustion turbine with and without duct firing operating scenarios. MassDEP, however, concluded that MATEP could achieve lower PM₁₀ and PM_{2.5} BACT emission rates based upon another combustion turbine/combined heat and power project previously permitted in Massachusetts. The UMASS Medical Center was permitted with a PM₁₀ and PM_{2.5} BACT emission rate of 0.034 lbs/mmBtu firing ULSD fuel within the combustion turbine. MassDEP relied on MATEP's BACT analysis and supportive application materials (Table 5-1, MATEP PSD Application) to conclude that 0.034 lbs/mmBtu and 5.40 lbs/hr are BACT for PM₁₀ and PM_{2.5} when the combustion turbine is firing ULSD fuel without duct firing. The Department concluded that when firing ULSD in the combustion turbine and firing natural gas in the duct burner, the emission rate of 0.034 lbs/mmBtu and 6.15 lbs/hr are BACT for PM₁₀ and PM_{2.5}.

MassDEP verified and concurs with the BACT analysis submitted by the Applicant for pollutants, PM₁₀/PM_{2.5} emitted by this Project. The BACT determination is lower than or equal to BACT emission limits established and published in EPA's RACT/BACT/LAER Clearinghouse (RBLC) and other BACT determinations made in other states including California, New York, Texas and Hawaii.

Greenhouse Gas Emissions (GHG)

For PSD permitting from combustion sources, GHGs are the aggregate of three pollutants: carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O). Since each pollutant has a different effect on global warming, PSD applicability is based on a carbon dioxide equivalent (CO_{2e}), determined by multiplying each pollutant by its global warming potential. Like other combustion sources, the main constituent of GHG for a combined cycle turbine is carbon dioxide. The N₂O will be controlled as NO_x by the SCR and the CH₄ will be controlled by good combustion practices. This BACT analysis focuses on CO₂ emissions as the primary GHG component. Emissions calculations are as CO₂-equivalent, or CO_{2e}.

For natural gas combustion, the calculated CO_{2e} emission factor used is 119 lb/mmBtu. This emission factor is based on a CO₂ emission factor of 118.9 lb/mmBtu calculated from Equation G-4 of 40 CFR Part 75 Appendix G plus an emission factor of 0.1 lb/mmBtu for other greenhouse gases (methane and nitrous oxide) calculated utilizing the emission factors for these two pollutants from Table C-2 of 40 CFR Part 98 Subpart C and the global warming potentials for these two pollutants from Table A-1 of 40 CFR Part 98 Subpart A.

For fuel oil combustion, the calculated CO_{2e} emission factor used is 166 lb/mmBtu. The CO_{2e} emission factor for fuel oil is calculated utilizing the emission factors for CO₂, methane and nitrous oxide from Table C-2 of 40 CFR Part 98 Subpart C and the global warming potentials for methane and nitrous oxide found in Table A-1 of 40 CFR Part 98 Subpart A. Using Part 75 methodology would yield a slightly less conservative emission factor than Part 98.

The most stringent control technology for control of GHG from a combustion turbine combined cycle unit is by means of carbon capture sequestration (CCS). MATEP evaluated the technical feasibility of CCS based upon the following four steps. The first step is the capture or removal of carbon (i.e., CO₂) from the exhaust gas. The capture system requires the use of an absorption system, which requires the use of ammonia, monoethanolamine, or other amine solution. The use of these chemicals in an urban setting is prohibitive. In addition, the required size of this adsorption system prohibits its use in the limited area of MATEP LP's Facility. The second step of CCS is the compression of the CO₂. The third step is the transport of the captured CO₂ to a suitable disposal site. The fourth step is the actual disposal of CO₂, normally deep underground in geological formations such as coal seams and oil and gas explorations. MATEP LP pointed out that since most or all steps in the CCS are not technically feasible for the Project, CCS is not technically feasible. MassDEP agrees that CCS is not feasible at the Facility.

MATEP LP will use a combination of approaches to achieve BACT for GHG including all of the following elements.

- 1) MATEP LP shall use natural gas as the primary fuel of use, the lowest carbon emitting fuel for a fossil fuel project and ULSD, as a backup fuel for a maximum of 720 hours per rolling 12-month period.
- 2) MATEP LP has chosen to install a Solar Titan 130 combustion gas turbine, which has a highly energy efficient heat rate of 10,230 kilojoules per kilowatt-hour (kJ/kWh). This heat rate closely matches the most energy efficient turbines available, where the heat rate ranges from 10,230 to 11,465 kJ/kWh, where the lower the heat rate means a higher efficiency turbine. The thermal efficiency of the proposed heat recovery steam generator (HRSG) is significantly higher than for similarly sized stand-alone boiler. MATEP LP expects a 95 percent thermal efficiency in the final design. MATEP LP plans to minimize parasitic loads such as support equipment necessary for overall plant operation.
- 3) MATEP LP shall implement energy efficiency improvements to the Facility's operations, including replacing the existing water treatment system pump motors with variable frequency drives (VFDs), replacing two cooling tower fan motors with VFDs and converting a large constant volume ventilation exhaust fan serving the plant's diesel engine bay to variable air volume.

MassDEP verified and concurs with the BACT analysis submitted by the Applicant for GHG emitted by this Project. The BACT determination is lower than or equal to BACT emission limits established and published in EPA's RACT/BACT/LAER Clearinghouse (RBLC) and other BACT determinations made in other states including California, New York, Texas and Hawaii.

Startup and Shutdown Emissions

Startup and shutdown emissions were evaluated for PM emissions. MATEP LP proposes to comply with BACT for startup and shutdown by employing good operating practices (by following the combustion turbine manufacturer's recommendations during startup and by limiting startup time).

The proposed startup and shutdown emission limits for $PM_{10}/PM_{2.5}$ are subject to BACT review as presented in Table 3.

Table 3.			
Turbine Startup and Shutdown Emission Limits (pounds per event)			
Pollutant	Fuel	Startup (duration ≤ 3 hours)	Shutdown (duration ≤ 1 hour)
PM ₁₀ /PM _{2.5}	Natural gas	12.3	4.1
	ULSD	21.3	7.1

VII. Monitoring and Testing

MATEP LP will be performing an initial emissions test to measure PM_{2.5} and PM₁₀ emissions in the flue gas from the turbine and heat recovery steam generator. The emissions testing program shall generate PM data in accordance with the EPA Reference Test Methods of 40 CFR Part 60 Appendix A and 40 CFR Part 51 Appendix M. This data can be directly compared to the permit emission limits to determine compliance.

MATEP LP is required to monitor and keep records of the amount of sulfur in the natural gas that is combusted in the combined cycle turbines pursuant to New Source Performance Standards 40 CFR Part 60 Subpart KKKK.

MATEP LP is required to conduct emissions tests for PM₁₀, PM_{2.5} and CO₂ emissions within 180 days of initial firing and continuous operation of the new turbine and heat recovery steam generator.

VIII. Impact Analysis Based on Modeling

As part of its Application, MATEP LP submitted a dispersion modeling analysis that met the requirements of 40 CFR Part 51, Appendix W.

MATEP LP's consultant (Epsilon) conducted a refined dispersion modeling analysis to determine impact concentrations at receptors located along the Facility property line and beyond. The refined analysis was based on proposed worst case facility emission rates and 5 years (2009-2013) of meteorological conditions. The analysis was conducted in accordance with EPA's "Guideline on Air Quality Models" (November 2005) and Guidance for PM_{2.5} Permit Modeling (May 2014), as well as MassDEP's "Modeling Guidance for Significant Stationary Sources of Air Pollution" (June 2011) and as described in the Air Quality Modeling Protocol submitted to MassDEP (March 2014). The EPA-recommended AERMOD model (current at the time AERMOD version 14134, AERMAP version 11103, AERMET version 14134) was used to perform the dispersion modeling.

The meteorological data was collected at the Boston Logan Airport National Weather Service (NWS) Automated Surface Observing System (ASOS) station, which is the closest first order

NWS station to MATEP. It is located approximately 5.3 miles to the east-northeast of MATEP. The station is representative of the Project area since they are both located in the city of Boston and exposed to the same weather systems and conditions such as urban heat island effects and coastal air-land-sea interactions. Therefore, MATEP LP was not required to perform one year of on-site monitoring of meteorological conditions before conducting dispersion modeling. Default processing options were used in the AERMET processing for this analysis. The preferred ASOS 1-minute wind data was used in the processing to reduce the number of calm hours input to the model.

The modeling predicted air quality concentration impacts on a nested Cartesian coordinate receptor grid extending 20 kilometers from the MATEP stack. Receptors are discrete points that represent a specific location on a coordinate grid. A total of 1557 receptors were included in the dispersion modeling analysis including four elevated “flagpole” receptors on nearby parking garages. The spacing of the receptors ranged from 50 meters close to the MATEP Facility and increased to 2,000 meters beyond 10 kilometers. This means the receptor field was denser (i.e., more receptors per unit of area) closer in to the Facility and less dense with increasing distance away from the facility. The denser part of the grid covered the surrounding area including the neighborhoods of Longwood, Brookline Village, Mission Hill and Fenway/Kenmore.

The dispersion modeling results for the Project are provided in Table 4 along with the corresponding Significant Impact Levels (SILs) and PSD Class II Increments established by EPA. According to current EPA guidance (refer to flow charts on Pages 6 and 7 in EPA memorandum dated June 30, 2015 from Tyler Fox to Proposed Regulatory Docket No. EPA-HQ-OAR-2015-0310), compliance with the NAAQS and PSD Increments is demonstrated for all pollutants and averaging periods for which impacts are below the SILs. This includes compliance for PM_{2.5} for new or modified facilities representing the first PSD application in an area that establishes the minor source baseline date for that area. The MATEP LP turbine project is a major source modification that is establishing the PM₁₀ minor source baseline date for Boston and the PM_{2.5} minor source baseline date for Suffolk County.

Table 4 Project Maximum Predicted Impact Concentrations Compared to Significant Impact Levels (micrograms/cubic meter)				
Pollutant	Averaging Period	Maximum Predicted MATEP Turbine Project Impact	SIL	PSD Increment*
PM ₁₀	24-Hour	1.092	5	30
PM _{2.5}	24-Hour	0.829	1.2	9.0
	Annual	0.060	0.3	4.0

* The entirety of the PM_{2.5} PSD increment is available.

The modeling results in the table show maximum predicted impact concentrations are below the SILs for the two pollutants modeled. Therefore, the required dispersion modeling demonstrates compliance with 24-hour and annual PM_{2.5} and 24-hour PM₁₀ NAAQS. Furthermore, the results

in the table represent worst-case impacts over the entire receptor grid, including the elevated receptors and densely spaced receptors in the immediate surrounding neighborhoods. Accordingly, it can be concluded that the NAAQS will remain protected with the addition of the MATEP Project, and therefore, the public health and welfare protected, including residents in nearby mid-rise buildings and adjacent neighborhoods.

In addition, compliance with PSD Increments is also demonstrated for these pollutants based on meeting the following three criteria:

1. A direct comparison of maximum predicted impacts to the allowable increment values. Table 4 shows that MATEP's Project impacts, which are all below the SILs, are correspondingly well below the PSD Increment values. This comparison is allowed because the MATEP Project is the first PSD application in Boston/Suffolk County tracking area since the increment major source baseline dates were set (January 6, 1975 for PM₁₀; October 20, 2010 for PM_{2.5}).
2. Information on the extent to which, if any, increment has already been consumed. No major sources for PM₁₀/PM_{2.5} have been permitted prior to MATEP LP in the tracking area and the minor source baseline is being triggered by this Project. Therefore, no increment has been consumed by nearby sources. This is confirmed by the declining trends in PM₁₀ and PM_{2.5} levels in the ambient air as shown in the Massachusetts Annual Air Quality Reports available to review on the MassDEP web site (<http://www.mass.gov/eea/agencies/massdep/air/quality/air-monitoring-reports-and-studies.html>)
3. Information on increment consumption or expansion by more distant sources. For a given impact analysis, this would typically involve assessing overlapping significant impact areas. Because MATEP's impacts from this Project are under the SILs, no such overlap can occur. Furthermore, a review of PSD permits issued in nearby Middlesex County (cities of Cambridge and Everett) indicates that modeled impacts associated with these sources were also below the SILs for PM₁₀ (PM_{2.5} SILs/NAAQS/Increment did not exist at the time). The absence of significant impacts implies no or very little PM₁₀ increment consumption from these sources.

Preconstruction Monitoring Analysis

Ambient background monitoring data from MassDEP's Boston Kenmore Square monitoring site for the three (3) year period of 2010 through 2012 were used to characterize criteria pollutant ambient air impacts. PSD regulations allow proposed sources to use existing monitoring data in lieu of PSD preconstruction monitoring requirements for a pollutant if the source can demonstrate that its ambient air impact is less than a de minimis amount (also called a significant monitoring concentration or SMC) as specified in those regulations. As shown in Table 5 below,

dispersion modeling conducted by MATEP LP predicted maximum Project impact concentrations well below corresponding SMC levels for all pollutants for which SMCs exist.

Table 5			
Preconstruction Monitoring – Significant Monitoring Concentration			
Pollutant	Averaging Period	SMC (ug/m³)	Maximum Predicted Project Impact (ug/m³)
PM ₁₀	24-Hour	10.0	1.092
PM _{2.5}	24-Hour	N/A	0.829
PM _{2.5}	Annual	N/A	0.060

Table 5 Key:

SMC = Significant Monitoring Concentration

ug/m³ = micrograms per cubic meter

N/A = Not Available

EPA had established an SMC for PM_{2.5} but this SMC was remanded by the United States Court of Appeals for the DC Circuit on January 22, 2013 (No. 10-1413, Sierra Club v. EPA). On March 4, 2013, the EPA Office of Air Quality Planning and Standards issued guidance to applicants and regulators with regard to the ramifications of the January 22, 2013 Appeals Court decision. The pertinent excerpt of this recent EPA guidance is as follows:

As a result of the Court's decision, Federal PSD Permits issued henceforth by either the EPA or a delegated state permitting authority pursuant to 40 CFR 52.21 should not rely on the PM_{2.5} SMC to allow applicants to avoid compiling air quality monitoring data for PM_{2.5}. Accordingly, all applicants requesting a federal PSD Permit, including those having already applied for but have not yet received the permit, should submit ambient PM_{2.5} monitoring data in accordance with the Clean Air Act requirements whenever either direct PM_{2.5} or any PM_{2.5} precursor is emitted in a significant amount. In lieu of applicants setting out PM_{2.5} monitors to collect ambient data, applicants may submit PM_{2.5} ambient data collected from existing monitoring networks when the permitting Authority deems such data to be representative of the air quality in the area of concern for the year preceding receipt of the application. We believe that applicants will generally be able to rely on existing representative monitoring data to satisfy the monitoring data requirement.

The Kenmore Square monitoring site, located approximately one mile from MATEP, is representative of the Facility site due to its close proximity. In particular, this site is representative of traffic conditions in the Longwood Medical Area as it is located at the

intersection of several busy roads. Furthermore, the Kenmore monitoring station is in the vicinity of the source under consideration according to the Guideline on Air Quality Models (70 FR 68242). The Kenmore station fully meets the requirements of 40 CFR part 51, Appendix W, Section 8.2 in terms of time period, length of record, completeness and quality of data.

With respect to current representativeness, the Kenmore station was representative in the year preceding receipt of the application and continues to be representative. Use of the data from this monitoring site is representative of the background ambient air levels for the Boston area, and the Project location in particular. In addition, the data represents background concentrations that are conservative because they reflect impacts from Facility emissions that are also included in the modeling.

For the reasons set forth above, in accordance with the PSD regulations and recent EPA guidance, MassDEP has determined that preconstruction monitoring is not required. Moreover, we have determined that the Kenmore Station ambient air data is representative of not only the Project area, but all its surrounding neighborhoods.

Justification for Using Significant Impact Levels (SILs) for PM_{2.5}

Despite the fact that the PSD regulations addressing SILs for PM_{2.5} were partially vacated and remanded (at EPA's request) in the January 22, 2013 Appeals Court decision, the use of the PM_{2.5} SILs is still valid in certain circumstances in which ambient background concentrations are relatively low. EPA did not concede that it lacked authority to promulgate SILs and the Court found that it was not necessary to address the question of whether EPA had such authority. In fact, the SILs were vacated and remanded only in PSD sections 40 CFR 51.166(k)(2) and 52.21(k)(2) but were not vacated in 40 CFR 51.165(b)(2). This is most likely because the text of this latter regulation does not exempt a source from ambient air quality analysis but states that if a source located in an attainment area exceeds a SIL in a nonattainment area (or predicted nonattainment situation), it is deemed to have contributed to or caused a violation of a NAAQS.

Key examples in the Appeals Court decision supporting the vacature and remand involved cases in which the ambient air quality background is very close to the NAAQS. This is not the case in the Boston area where the PM_{2.5} background (24-hour averaging time) is only slightly over half of the NAAQS, 21.7 ug/m³ vs. 35 ug/m³. Likewise, the annual PM_{2.5} background is about three quarters of the NAAQS, 9.2 ug/m³ vs. 12 ug/m³, a difference that is fully 9 times the remanded annual SIL value of 0.3 ug/m³. Therefore, use of the prior PM_{2.5} SILs is appropriate in the case of the ambient air quality impact analysis for MATEP LP's Project because the background concentrations plus the SILs still leave a significant margin before the NAAQS would come close to being jeopardized.

Use of the prior PM_{2.5} SILs is also consistent with the recent EPA guidance on this matter which states¹:

- The EPA does not interpret the Court's decision to preclude the use of SILs for PM_{2.5} entirely but additional care should be taken by permitting authorities in how they apply those SILs so that the permitting record supports a conclusion that the source will not cause or contribute to a violation of the PM_{2.5} NAAQS.
- PSD permitting authorities have the discretion to select PM_{2.5} SIL values if the permitting record provides sufficient justification for the SIL values that are used and the manner in which they are used to support a permitting decision.
- The PM_{2.5} SIL values in the EPA's regulations may continue to be used in some circumstances if permitting authorities take care to consider background concentrations prior to using these SIL values in particular ways.
- Because of the Court's decision vacating the PM_{2.5} SMC, all applicants for a federal PSD Permit should include ambient PM_{2.5} monitoring data as part of the air quality impacts analysis. If the preconstruction monitoring data shows that the difference between the PM_{2.5} NAAQS and the monitored PM_{2.5} background concentrations in the area is greater than the EPA's PM_{2.5} SIL value, then the EPA believes it would be sufficient in most cases for permitting authorities to conclude that a proposed source with a PM_{2.5} impact below the PM_{2.5} SIL value will not cause or contribute to a violation of the PM_{2.5} NAAQS and to, therefore, forego a more comprehensive cumulative modeling analysis for PM_{2.5}.
- As part of a cumulative analysis, the applicant may continue to show that the proposed source does not contribute to an existing violation of the PM_{2.5} NAAQS by demonstrating that the proposed source's PM_{2.5} impact does not significantly contribute to an existing violation of the PM_{2.5} NAAQS. However, permitting authorities should consult with the EPA before using any of the SIL values in the EPA's regulations for this purpose (including the PM_{2.5} SIL value in section 51.165(b)(2), which was not vacated by the Court).

Secondary PM_{2.5} Impacts

EPA (2013) has recently adopted guidance regarding secondary PM_{2.5} formation in PSD dispersion modeling analyses.

1. EPA, Office of Air Quality Planning and Standards, "Circuit Court Decision on PM_{2.5} Significant Impact Levels and Significant Monitoring Concentration – Questions and Answers", March 4, 2013.
<http://www.epa.gov/nsr/documents/20130304qa.pdf>

- Case 1: If PM_{2.5} emissions < 10 tpy and NO_x & SO₂ emissions < 40 tpy, then no PM_{2.5} compliance demonstration is required.
- Case 2: If PM_{2.5} emissions > 10 tpy and NO_x & SO₂ emissions < 40 tpy, then PM_{2.5} compliance demonstration is required for direct PM_{2.5} emission based on dispersion modeling, but no analysis of precursor emissions from the project source is necessary.
- Case 3: If PM_{2.5} emissions > 10 tpy and NO_x &/or SO₂ emissions > 40 tpy, then PM_{2.5} compliance demonstration is required for direct PM_{2.5} emission based on dispersion modeling, AND the applicant must account for impact of precursor emissions from the project source.
- Case 4: If PM_{2.5} emissions < 10 tpy and NO_x &/or SO₂ emissions > 40 tpy, then PM_{2.5} compliance demonstration not required for direct PM_{2.5} emissions, BUT the applicant must account for impact of precursor emissions from the project source.

Since the Project falls into Case 2, only direct emissions of PM_{2.5} were modeled. Note that while impacts of secondary PM_{2.5} emissions have not been explicitly quantified and modeled, sufficient margin is available between the predicted impact concentrations from direct PM_{2.5} emissions and the NAAQS, that the NAAQS would not be threatened by additional secondary PM_{2.5} emissions. This conclusion is further supported by the fact that the maximum PM_{2.5} impacts are predicted relatively close to MATEP, wherein the secondary formation of PM_{2.5} takes time and distance and would have maximum impact well downwind from the Facility.

Impairment to Visibility, Soils and Vegetation

40 CFR 52.21(o) requires the Applicant to conduct an analysis of the air quality impact and impairment to visibility, soils, and vegetation that would occur as a result of the Project and general commercial, residential, industrial, and other growth associated with the Project.

The Lye Brook Wilderness Area in southern Vermont is the closest Class I area to MATEP. Lye Brook is located approximately 175 km to the northwest of MATEP. Based on the proposed emission rates and distance to the nearest Class I location, it is not expected that impacts from the Project will have an adverse effect on visibility in the Class I area. This was confirmed by an initial screening analysis as laid out in the Federal Land Manager's (FLMs) 2010 Air Quality Related Values Work Group (FLAG) Guidance and performed by MATEP. Therefore, a visibility modeling analysis of the proposed MATEP modification was not conducted. This decision received the concurrence of the FLM (Forest Service, Eastern Regional Office) in an email from Ralph Perron to Epsilon dated May 31, 2016. The completed FLM Applicability Form and screening analysis, along with FLM's response, is contained in a June 22, 2016 Memorandum Re: Visibility Modeling and Federal Land Manager Notification, from Mr. Vincent Tino, CCM, Epsilon to Mr. Glenn Pacheco. (The memorandum is attached to the RTC and the Fact Sheet as Appendix A.)

The EPA guidance document for soils and vegetation, “A Screening Procedure for the Impacts of Air Pollution Sources on Plants, Soils, and Animals” (EPA Screening Procedure) (EPA 450/2-81-078) established a screening methodology for comparing air quality modeling impacts to “vegetation sensitivity thresholds.” As an indication of whether emissions from the Project will significantly impact the surrounding vegetation (i.e., cause acute or chronic exposure to each evaluated pollutant), the modeled emission concentrations have been compared against both a range of injury thresholds found in the guidance, as well as those established by the NAAQS secondary standards. Since the NAAQS secondary standards were set to protect public welfare, including protection against damage to crops and vegetation, comparing modeled emissions to these standards provides some indication of whether potential impacts are likely to be significant. Table 6 lists the project impact concentrations and compares them to the vegetation sensitivity thresholds and NAAQS secondary standards. All pollutant impact concentrations are below the vegetation sensitivity thresholds.

Table 6. Vegetation Impact Screening Thresholds				
Pollutants	Averaging Period	Max Impacts (Facility + Bkgd) ($\mu\text{g}/\text{m}^3$)	Secondary NAAQS ($\mu\text{g}/\text{m}^3$)	EPA’s 1980 Screening Concentrations ($\mu\text{g}/\text{m}^3$)
PM ₁₀	24-hour	45.8	150	None
PM _{2.5}	24-hour	23.8	35	None
	Annual	9.4	15	

IX. Mass Based Emission Limits

To ensure the NAAQS and PSD increment are not violated, a PSD Permit must contain enforceable permit terms and conditions which ensure the mass flow rates for each modeled pollutant are not exceeded. This is accomplished by establishing mass-based emission limits for the modeled pollutant PM₁₀/PM_{2.5} with or without the use of Continuous Emissions Monitors (CEMS). Since CEMS will not be used for establishing compliance, the applicable stack test method establishes the averaging by default.

The PSD Permit contains the mass-based emission limits the Permittee used in demonstrating compliance with the NAAQS and PM_{2.5} increment, and are therefore enforceable emission limits in the PSD Permit.

The mass-based emission limits for GHG were not used in the impact analysis for modeling since there is no NAAQS or increment for GHG to protect. The PSD Permit does contain the mass-based emission limits for GHG which are representative of BACT for the Project.

X. Environmental Justice

MATEP LP addressed the PSD Environmental Justice (EJ) requirements in its PSD permit application. The documentation that is provided in the PSD permit application enabled MassDEP to fulfill its obligation under the provisions of the April 11, 2011 PSD Delegation Agreement between the EPA and MassDEP to “identify and address, as appropriate high and adverse human health or environmental effects of federal programs, policies and activities on minority and low income populations” in accordance with Executive Order 12898 (February 11, 1994). The Executive Order was designed to ensure that each federal agency “make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority and low-income populations.”

The EPA defines EJ as “the fair treatment and meaningful involvement of all people regardless of race, color, national origin or income with respect to the development, implementation, and enforcement of environmental laws, regulations and policies. Fair treatment means that no group of people, including a racial, ethnic, or socioeconomic group, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.”

The assessment of environmental justice (EJ) considers the following:

- The areas in which the proposed Project may result in significant adverse environmental effects;
- The presence and characteristics of potentially affected minority and/or low-income populations (“communities of concern”) residing in these study areas; and
- The extent to which these communities are disproportionately affected in comparison to the effects experienced by the population of the greater geographic area within which the affected area is located is determined.

The air quality dispersion modeling analysis conducted for the PSD application documents that there will be no disproportionately high and adverse human health or environmental effects of the Project on areas with minority populations and low-income populations, because all predicted Project impacts are below Significant Impact Levels (SILs).

Public Participation

MATEP LP published the Notice of Public Hearing and Public Comment Period on the Draft PSD Permit in English, Spanish, Portuguese and Chinese and Russian. Translators were provided at the Public Hearing.

MATEP LP posted electronic copies of the Notice of Public Hearing and Public Comment Period, Proposed Plan Approval, Draft PSD Permit and Draft PSD Fact sheet on its website.

A summary of the public outreach previously conducted by MATEP LP is given below.

- Notification of Filing an Expanded Environmental Notification Form (EENF) under the Massachusetts Environmental Policy Act (MEPA) and Public Scoping – December 2014

MATEP LP consulted with the EOEEA Environmental Justice Director on December 5, 2014 regarding the overall public outreach approach for the EENF. MATEP LP's outreach efforts are described below.

MATEP LP requested and received an extended public notice period for the Massachusetts Environmental Policy Act (MEPA) Expanded Environmental Notification Form (ENF). The Expanded ENF was submitted December 16, 2014 and noticed in the December 24, 2014 *Environmental Monitor*. It was noticed again in the *Environmental Monitor* on January 7, 2015 as well as in the *Boston Herald*.

Following notice in the *Environmental Monitor*, MATEP LP published a two-page fact sheet describing the Project and options for comment in the three most common non-English languages spoken in the zip code areas adjacent to the Project site (02215, 02115, 02120, 02446). The fact sheet was published in English in the *Mission Hill Gazette* on January 9, 2015, in Spanish in *El Mundo Boston* on January 15, 2015, in Chinese in *Sampan* on January 21, 2015 and in Russian in the *Boston Russian Bulletin* on February 1, 2015. The fact sheets, along with a news announcement, were published on MATEP LP's website. The MEPA Office accepted comments in all languages through February 6, 2015.

A public scoping session was held to hear comments on the proposed Project from 5:00 to 7:00 p.m. on January 28, 2015 at the Inn at Longwood (342 Longwood Ave., Boston). MATEP LP provided interpretation services in Spanish, Russian and Chinese at the public meeting.

- Notification of Filing a Single Environmental Impact Report under the Massachusetts Environmental Policy Act (MEPA) – May 2014

The submittal of the Single Environmental Impact Report (EIR) was announced in the *Environmental Monitor* on May 20, 2015. MATEP LP published the notification of the availability of the Single EIR in English in the *Boston Herald* on May 15, 2015 and the *Mission Hill Gazette* on June 12, 2015, in Spanish in *El Mundo Boston* on May 14, 2015, in Chinese in *Sampan* on May 8, 2015 and in Russian in the *Boston Russian Bulletin* on February 1, 2015. The Single EIR was provided to the Boston Public Library central and Parker Hill (Mission Hill neighborhood) branches. Members of the public were able request copies through the MEPA Office. Fact sheets in English, Chinese, Spanish, Russian and Portuguese were placed at the above-noted branches of the Boston Public

Library. The Single EIR was included the PSD permit application as an electronic attachment.

- Longwood Medical Area (LMA) Forum Meeting - September 2015

At a joint meeting of the Medical, Academic and Scientific Community Organization (MASCO) and the Boston Redevelopment Authority (BRA) on September 28, 2015, MATEP presented plans for the combined heat and power facility upgrade project. In addition to MASCO and BRA, the meeting was attended by representatives of institutions within the Longwood Medical Area (LMA) served by MATEP and neighboring residents.

Conclusion

MassDEP hereby finds that there will be no disproportional adverse health or environmental impact on areas with minority populations and low-income populations. MATEP LP has demonstrated that emissions from the proposed Project itself will be well within the NAAQS, which are designed to be health-protective of the most sensitive populations.

The above-discussed analyses and actions fulfill MassDEP's obligations under the Delegation Agreement and EPA Environmental Justice Policy.

XI. National Historic Preservation Act, Endangered Species Act, Tribal Consultation

Section IV of the PSD Delegation Agreement contains the requirements for Applicants (e.g., MATEP), MassDEP, and EPA with regards to the PSD Program. Under the PSD Delegation Agreement, EPA must engage in consultation as required by federal law before MassDEP issues PSD Permits.

Section IV.H.3. states that "[i]f EPA requires more time to consult with an Indian tribe before issuance of a Draft PSD Permit, refrain from issuing the Draft PSD Permit until EPA informs MassDEP that it may do so." In addition, Section IV.H.4. states that "[i]n all cases, MassDEP will refrain from issuing any PSD Permit until EPA has notified MassDEP that EPA has satisfied its NHPA, ESA, and Tribal consultation responsibilities with respect to that Permit."

The following sections outline how the NHPA, ESA, and Tribal consultation requirements identified under the PSD Delegation Agreement have been met.

National Historic Preservation Act

On August 25, 2014, Epsilon submitted a letter to the Massachusetts Historic Commission (MHC) notifying the MHC of MATEP LP's submittal of a PSD Permit Application for the

proposed Project. The letter explained that Epsilon has provided an enclosed Project Notification Form to initiate review in compliance with Section 106 of the National Historic Preservation Act (36 CFR 800) and the State Register Review (950 CMR 71). In a December 9, 2015 letter to MassDEP, EPA stated that NHPA consultation requirements for the proposed Project have been satisfied.

Endangered Species Act

Section 7 of the Endangered Species Act (ESA) requires that certain federal actions such as federal PSD Permits address the protection of endangered species in accordance with the ESA.

On October 29, 2015, Epsilon submitted a letter to Thomas R. Chapman, Supervisor, New England Fish and Wildlife Service (FWS) field office notifying the FWS office of MATEP LP's submittal of the PSD Permit Application for the proposed Project. The letter stated that MATEP LP is aware of and understands current ESA consultation procedures outlined on the FWS website. The website provides an endangered species consultation process in which the Applicant conducts the initial consultation. Epsilon reviewed the data for part of Suffolk County and identified three potential endangered species, the piping plover, Red Knot (migratory only), and Northern Long-eared Bat. The Piping Plover is found only in Revere and Winthrop and thus does not reside near the MATEP project. The Red Knot is a migratory listing only and is scattered along the coast in small numbers and not near the Facility in Boston. Finally, the Northern Long-eared Bat resides statewide in mines, caves and forested habitats, none of which match the MATEP area.

In a December 9, 2015 letter to MassDEP, EPA stated that ESA consultation requirements for the proposed Project have been satisfied.

Tribal Consultation

On August 26, 2014, Epsilon submitted separate letters to the Tribal Environmental Directors and the Tribal Historic Preservation Officers for the Wampanoag Tribe of Gay Head (Aquinnah) and Mashpee Wampanoag Tribe. The letters notified the Tribes of the proposed Project's PSD Permit Application and described how the proposed Project will support system reliability, expand service, and improve energy efficiency. As of this date, the Tribal Environmental Directors for the two tribes have not responded to the letters. EPA finds that the submittal of the separate letters to the Tribal Environmental Directors satisfies its tribal consultation for the MATEP LP PSD permit.

In a December 9, 2015 letter to MassDEP, EPA stated that Tribal consultation requirements for the proposed Project have been satisfied.

XII. Comment Period, Hearings and Procedures for Final Decisions

Notice was given that all persons, including Applicants, who believe that any condition of the Draft Permit was inappropriate was required to raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, 5:00 p.m. on Tuesday, May 24, 2016, to Edward J. Braczyk of MassDEP at the address listed in Section XIII of the Draft Fact Sheet.

A public hearing was held on May 23, 2016 during the public comment period. In reaching a final decision on the PSD Permit, MassDEP has responded to all significant comments and is issuing a Response to Comments (RTC) document concurrently with this PSD Fact Sheet and the PSD Permit.

MassDEP is forwarding a copy of the PSD Permit, PSD Fact Sheet and RTC to the Applicant and each person who has submitted comments or requested notice.

Along with the PSD Permit, each person is being notified of their right to appeal, in accordance with 40 CFR 124.15 and 124.19 via the following language:

1. Within 30 days after the PSD Permit decision is issued under 40 CFR 124.15, any person who filed comments on the Draft Permit or participated in any public hearing may petition EPA's Environmental Appeals Board to review any condition of the Permit decision.
2. The effective date of the Permit is 30 days after service of notice to the Applicant and commenters of the final decision to issue, modify, or revoke and reissue the Permit, unless review is requested on the Permit under 40 CFR 124.19 within the 30 day period.
3. If an appeal is made to the EAB, the effective date of the Permit is suspended until the appeal is resolved.

XIII. MassDEP Contacts

Additional information concerning the PSD Permit may be obtained between the hours of 9:00 A.m. and 5:00 p.m., Monday through Friday, excluding holidays from:

Edward J. Braczyk
MassDEP Northeast Regional Office
205B Lowell Street
Wilmington, MA 01887
(978) 694-3200
edward.braczyk@state.ma.us

In addition, information on the Project and the PSD Permit may be obtained through the MassDEP website at: <http://www.mass.gov/eea/agencies/massdep/about/contacts/matep.html> .

APPENDIX A

Memorandum, June 22, 2016, To Mr. Glenn Pacheco, MassDEP,

From Mr. Vincent Tino, CCM, Epsilon Associates, Inc.

Re: Visibility Modeling and Federal Land Manager Notification